KIMO®
INSTRUMENTS

User Manual

Pressure • Temperature • Humidity • Air Velocity • Airflow • Sound level

Supplied with Calibration certificate

CE

Multifunction
AMI 300

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Technical features

Sensing elements

Pressure module Piezoresistive sensor
Overpressure allowed ±500 Pa : 250 mbar
Overpressure allowed ±2,500 Pa : 500 mbar
Overpressure allowed ±10,000 Pa : 1,200 mbar
Overpressure allowed ±500 mbar : 2 bar
Overpressure allowed ±500 mbar : 2 bar

Hotwire: Thermistance with a negative temperature coefficient
Ambient temperature : Pt100 1/3 Din.

Ø 70 and 100 mm vane probes : Hall effect sensor
Ambient temperature : Pt100 class A.

Ø 14 mm vane probe: Proximity sensor
Ambient temperature : Pt100 class A.

Hygrometry/Temp. probes: capacitive sensor Pt100 1/3 DIN

Thermocouple probes : type K, J and T class 1

Smart-plus Pt100 probes : Pt100 class 1/3 Din

Climatic conditions module:
Hygrometry : capacitive sensor
Temperature : semiconductor sensor
Air pressure : piezoresistive sensor

Air quality probes
CO_2 : NDIR sensor
CO : electrochemical sensor
Temperature : Pt100 class A
Hygrometry : capacitive sensor

Multifunction probe
Air velocity : Thermistance with a negative temperature coefficient
Hygrometry/Temp.: Capacitive sensor, Pt100 1/3 DIN

Tachometry sensor
Optical : optical sensor
Contact : optical probe with ETC adaptor

Omnidirectional probe
Air velocity : Thermistance with a negative temperature coefficient
Hygrometry/Temp.: Capacitive sensor, Pt100 1/3 DIN

Gas leak detection probe
Ch_4, hydrocarbon and LPG : electrochemical sensor

Instrument connections.....**On the top :**
2 secured mini-Din connectors for SMART-plus probes
Left side :
1 USB port for KIMO cable only
1 power supply plug

Modules connections.....**Thermocouple**
4 inputs for compensated miniature plug of thermocouple K, J or T type
Class 1 (as per IEC 584-3)
Pressure
2 pressure connectors Ø 6,2 mm made of nickel brass
2 threaded pressure connectors Ø 4,6 mm made of nickel brass (for 500 and 200 mbar)
+ 1 temperature thermocouple input for miniature connector
current/Voltage module
2 stereo jacks

Display.....Graphic display 320x240 pixels
Dim. 70 x 52 mm.
Color display
Display of 6 measurements (including 4 simultaneously)

Housing.....ABS shock-proof, IP54
Keypad.....Metal-coated, 5 keys, 1 joystick
Conformity.....electromagnetic compatibility (as per NF EN 61326-1)
Power supply.....4 alcaline batteries 1,5V LR6
Operating environment.....Neutral gas
Operating temperature.....from 0 to 50°C
Storage temperature.....from -20 to +80°C
Auto shut-off.....adjustable from 0 to 120 min
Weight.....380g
Languages.....French, English, and others coming soon. Please contact us

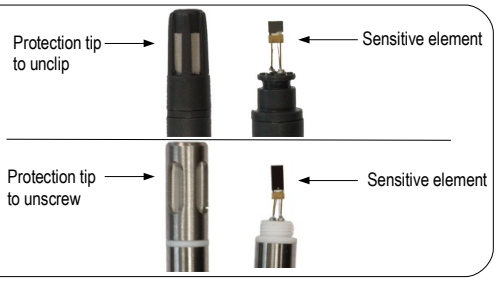
Specifications

	Measuring units	Measuring range	Accuracy*	Resolutions
PRESSURE				
	Pa, mmH_2O, In WG, mbar, hPa, mmHg, DaPa, kPa	From 0 to ±500 Pa	± 100 Pa : ±0.2% of reading ±0.8Pa, beyond ±0.2% of reading ±1,5Pa,	0.1 Pa from -100 to +100 Pa, 1 Pa beyond
		From 0 to ±2,500 Pa	±0.2% of reading ±2Pa	1Pa
		From 0 to ±10,000 Pa	±0.2% of reading ±10Pa	1Pa
	mmH_2O, In WG, mbar, hPa, mmHg, DaPa, kPa, PSI	From 0 to ±500 mbar	±0.2% of reading ±0.5mbar	0,1mbar
	bar, In WG, mbar, hPa, mmHg, kPa, PSI	From 0 to ±2000 mbar	±0.2% of reading ±2mbar	1mbar
CURRENT / VOLTAGE				
	V, mA	From 0 to 2,5 V	±2mV	0.001 V
		From 0 to 10 V	±10mV	0.01 V
		From 0 to 4/20 mA	±0.01mA	0.01 mA
THERMOCOUPLE				
	°C, °F	K : From -200 to +1300°C	±1,1°C or ±0.4% Reading value**	0.1 °C
		J : From -100 to +750°C	±0.8°C or ±0.4% Reading value**	0.1 °C
		T : From -200 to +400°C	±0.5°C or ±0.4% Reading value**	0.1 °C
CLIMATIC CONDITIONS				
	Hygro.	%RH	From 5 to 95%RH	0.1 %RH
	Temp.	°C, °F	From -20 to +80°C	0.1 °C
		hPa	From 800 to 11,00 hPa	1 hPa
			See datasheet interchangeable measurement modules	

I – Technical specifications

	Measuring units	Measuring ranges	Accuracy*	Resolutions
HOTWIRE - Standard and telescopic -				
Air velocity	m/s, fpm, Km/h	from 0.15 to 1 m/s	± 3% of reading ± 0.03 m/s***	0.01 m/s
		from 0.15 to 3 m/s	±3% of reading ±0.03 m/s	0.01 m/s
Temperature	°C, °F	from 3.1 to 30 m/s	±3% of reading ±0.1 m/s	0.1 m/s
		from -20 to +80°C	±0.3% of reading ±0.25°C	0.1 °C
Airflow	m^3/h, cfm, l/s, m^3/s	from 0 to 99,999 m^3/h	±3% of reading ±0.03*area(cm^2)	1 m^3/h
Ø 100 mm VANE PROBE				
Air velocity	m/s, fpm, Km/h	From 0.25 to 3 m/s	±3% of reading ±0.1m/s	0.01 m/s
		From 3.1 to 35 m/s	±1% of reading ±0.3m/s	0.1 m/s
Temperature	°C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1 °C
Airflow	m^3/h, cfm, l/s, m^3/s	From 0 to 99999 m^3/h	±3% of reading ±0.03*area (cm^2)	1 m^3/h
Ø 70 mm VANE PROBE				
Air velocity	m/s, fpm, Km/h	From 0.3 to 3 m/s	±3% of reading ±0.1m/s	0.1 m/s
		From 3.1 to 35 m/s	±1% of reading ±0.3m/s	
Temperature	°C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1 °C
Airflow	m^3/h, cfm, l/s, m^3/s	From 0 to 99,999 m^3/h	±3% of reading ±0.03*area (cm^2)	1 m^3/h
Ø 14 mm VANE PROBE				
Air velocity	m/s, fpm, Km/h	From 0.8 to 3 m/s	±3% of reading ±0.1m/s	0.1 m/s
		From 3.1 to 25 m/s	±1% of reading ±0.3m/s	
Airflow	m^3/h, cfm, l/s, m^3/s	From 0 to 99,999 m^3/h	±3% of reading ±0.03*area (cm^2)	1 m^3/h
Temperature	°C, °F	From -20 to +80°C	±0.4% of reading ±0.3°C	0.1 °C
PITOT TUBE				
Air velocity	m/s, fpm, Km/h, mph	From 2 to 5 m/s	±0.3 m/s	0.1 m/s
		From 5,1 to 100 m/s	±0.5% of reading ±0.2m/s	
Airflow	m^3/h, cfm, l/s, m^3/s	From 0 to 99,999m^3/h	±0.2% of reading ±1% PE	1 m^3/h
DEBIMO BLADES				
Air velocity	m/s, fpm, Km/h, mph	From 4 to 20 m/s	±0.3 m/s	0.1 m/s
		From 21 to 100 m/s	±1% of reading ±0.1m/s	0.1 m/s
Airflow	m^3/h, cfm, l/s, m^3/s	From 0 to 99,999m^3/h	±0.2% of reading ±1% PE	1 m^3/h
AIR QUALITY PROBES: CO / CO_2 / Temperature / Hygrometry				
Temperature	°C, °F	From -20 to +80°C	See related datasheet	0.1 °C
CO_2	ppm	From 0 to 5,000 ppm	« Portable probes »	1 ppm
CO	ppm	From 0 to 500 ppm		0,1 ppm
Relative humidity	%RH	From 5 to 95%RH		0.1 %RH
HYGROMETRY PROBES				
STD Relative humidity	%RH	From 3 to 98 %RH	See related datasheet	0.1 %RH
Absolute humidity / enthalpy	g/Kg / Kj/Kg	According to hygrometry and temperature measuring ranges	« Portable probes »	0.1 g/Kg
Dew point	$°C_{td}$, $°F_{td}$	From -50 to +80°C_{td}	±0.6% of reading ±0.5°C_{td}	0.1 °C_{td}
Ambient temperature	°C, °F	From -20 to +80°C	±0.3% of reading ±0.25°C	0.1 °C
HYGROMETRY PROBES				
H.T Relative humidity	%RH	From 3 to 98 %RH	See related datasheet	0.1 %RH
Absolute humidity / enthalpy	g/Kg / Kj/Kg	According to hygrometry and temperature measuring ranges	« Portable probes »	0.1 g/Kg
Dew point	$°C_{td}$, $°F_{td}$	From -50 to +80°C_{td}	±0.6% of reading ±0.5°C_{td}	0.1 °C_{td}
Ambient temperature	°C, °F	From -40 to +180°C	±0.3% of reading ±0.25°C	0.1 °C

It's extremely unwise to remove the protection tip of our hygrometry probes as the sensitive element is very fragile even to light contacts. However, if you have to remove the protection tip, take all possible precautions and avoid any contact with the sensitive element.
To remove the protection tip, unscrew it or unclip it

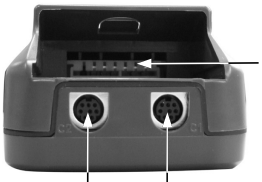


TACHOMETRY Probe (see datasheet «portable probes»)	**OMNIDIRECTIONAL PROBE See datasheet "Portable probes"**
MULTIFUNCTION Probes (see datasheet «portable probes»)	**GAS LEAK DETECTION PROBE See datasheet "Portable probes"**
Pt100 Smart-Plus Probes (see related datasheet)	0.01 °C

*All accuracies indicated in this document were stated in laboratory conditions and can be guaranteed for measurements carried out in the same conditions, or carried out with required compensation.
** The accuracy is expressed either by a deviation in °C or by a percentage of the value concerned. Only the bigger value is considered.
***Optional specific adjustment and calibration

Description

Top view



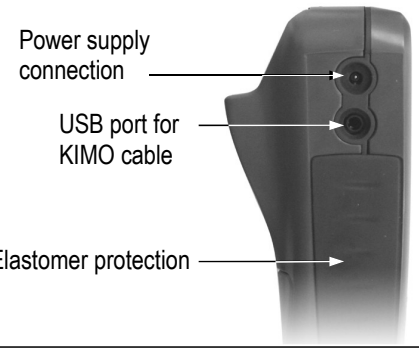
Module connections

Mini-Din C2 connector

mini-Din C1 connector

Graphic display

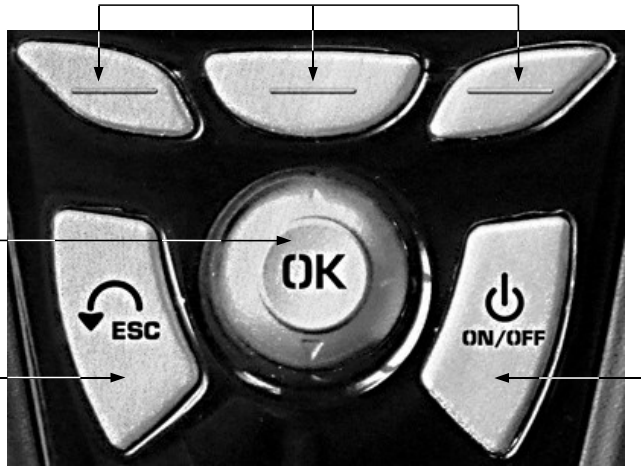
Side view



Keypad

Access keys for circular menu

Browsing joystick :
- 4 directions
- Validation



Escape key

On/Off key

Connections

Interchangeable measurement modules

Interchangeable modules with Smart-plus system are automatically recognized when connected to the instrument.

1. Current / voltage module

It allows current or voltage measurements on **V/A1** or **VA/2** channels with current/voltage input cables or ammeter clamps.

2. Pressure module

It allows differential pressure, air velocity or airflow measurements with **Pitot tube** or **Debimo** on two pressure inputs (**-** and **+**) and thermocouple temperature measurement on **Tc1** channel with wire thermocouple probes equipped with a miniature male connector.

3. Thermocouple module

It allows thermocouple temperature measurement on **Tc1, Tc2, Tc3** and **Tc4** channels with type **K, J** or **T** with wire thermocouple probes equiped with a miniature male connector.

4. Climatic conditions module

It allows hygrometry measurement on **Hygro** channel, ambient temperature measurement on **Ptx** channel and air pressure on **PATM** channel.

Wire probes with Smart plus system

Wire probes with Smart-plus system are automatically recognized when connected to the instrument.

mini-Din **C2** connector

Mini-Din **C1** connector

Probes are connected on min-DIN connectors **C1** and / or **C2**

Secured Mini-Din Connector

Non-exhaustive list of probes

Wireless probe/instrument communication

Wireless communication between probe and instrument with automatic recognition after power-up.

Hygrometry probes or Pt100 probes are displayed on **hygro, Tr1** or **Tr2** channels followed by wireless communication

Non-exhaustive list of probes

Wireless probes shall be located near the instrument for initial recognition. Connection between AMI300 and wireless probes must be established. See submenu "Wireless probes" p 9.

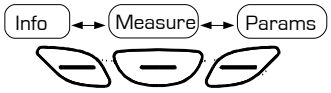
Power-up

Enter key code with directional pad.
(if the locking is activated)
◀ ▶ and ▲ ▼

Probe connection

Probes display

Select a connection with right and left keys ◀ ▶
Connections can be activated or deactivated with ▲ or ▼

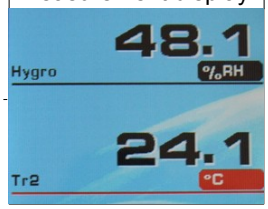


Select a sub menu with access keys

Measurement

Return to
previous screen

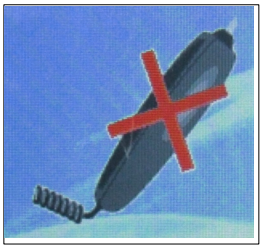
Measurement display



Sub menus appears according to probes type.
Select sub menu with arrows keys ◀ ▶ or access keys

OK

Communication interrupted



Check probes connection

Probe menu

1. Using wire probes and modules

Wire probes and modules with Smart-plus system are automatically recognized from first connection.
The "**Probe**" menu only appears when probes or module are connected. This menu allows to view probe information plugged to **C2, Module, C1** or **wireless connections**.
(See « Connections » p 7 for more information about connections).

Probes display

Info ↔ Measure ↔ Params

Available information are :

• Sensor type, Serial number, Date of last calibration or adjustement, Probes Status (enabled ou disabled).
On enabled mode, the probe is connected, the measurement is carried out and the value is displayed.
On disabled mode, the probe is connected, the measurement is not carried out and the value is not displayed.

2. Using wireless communication

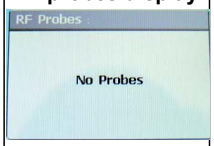
A- Add a wireless probe

A1. Go to probe menu by pressing "**Probe**" access key.
A2. With arrow keys ◀ and ▶ , go to "**RF probes**" display.
A3. Select **New** with access key.
A4. Power up the probe and press multifunction button until LED blinks. Once the probe is recognized, information appears.
Left button ◀ allows to return to the RF probes display and to access all RF probes already recognized by the instrument. With access keys, it is possible to delete (**Del)** a RF probe.

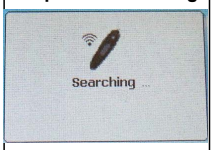
B- Select a wireless probe already created.

B1. Power up the RF probe (short press on Multifunction button).
B2. Go to "**Probe**" menu.
B3. With arrows keys ◀ and ▶ , go to "**RF probes**" Display. All the RF probes already recognized appear.
B4. Select the suitable RF probe with ▲ or ▼.
B5. Go to probe informations using arrow key ▶.
B6. Enable the RF probe with arrows keys ▲ and ▼ and confirm with **OK** .

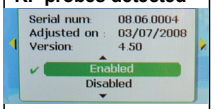
RF probes display



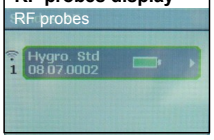
RF probes searching



RF probes detected



RF probes display



Functions

Temperature

The following functions are enabled only if at least one probe is connected.

- **Hold** (Hold - Min/Max)
- **Config** (Configuration) - see Air velocity
- **Δ T** (Delta T)
- **Alarms** - see Air quality
- **Rec** (Recording) - see Air velocity
- **Params** (Parameters) - see Air velocity

Hold / Min-Max

Press 1x in order to select **HOLD** function : measurement holding on display.
Press 2x in order to select **Min-Max** function : display of minimum and maximum values.
Press 3x : back to the continuous measurement.

Delta T

When two PT100 probes or 2 thermocouple temperature probes are connected, **AMI300** can calculate Delta temperature value : the temperature difference between **C2** and **C1**, or **T2** and **T1**, or **T4** and **T3**.
Select **Delta T** in order to view the temperature difference.
If you select **Delta T** again, Delta T function is disabled.

U coefficient

U coefficient is a thermal coefficient which allows to determine the variation between 2 ambient temperatures, taking into account the separation element between these 2 ambiances (a wall for instance).
Physics unit of **U** value is Watt per square meter and Kelvin degree : W/(m².K).
A low U value means that thermal isolation is good. When U value decreases, energy needs for heating **decrease** proportionately, and superficial temperatures **increase**. Therefore, indoor comfort is improved, and there is less risk of condensation on elements and items, which can generally be recognized by greyish stains, fungus, mouldy smell.

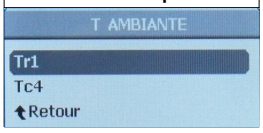
To activate **U coefficient :**
• thermocouple module shall be connected and active with at least one thermocouple probe on T1, T2 or T3 channel for contact temperature.
• at least one wire temperature probe, hygrometry, CO or CO2 on C1 or C2 channel, or one thermocouple probe on T4 channel for the ambient temperature

To calculate this coefficient, the device takes into account several parameters: .

For contact temperature, if several thermocouple probes are connected, the device will make the average of T1, T2 and T3 channels for U coef calculation.

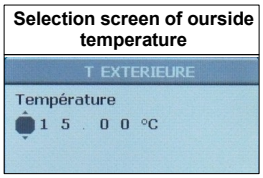
For ambient temperature, if several probes are connected, the device will display a selection screen, allowing to choose the probe for U coef calculation.

Selection screen of ambiant temperature



For outside temperature, if no wireless probe is connected, the device will display a screen, allowing to enter manually an outside temperature. Conversely, if several wireless probes are connected, the device will display a selection screen, allowing to choose the wireless probe for U coef calculation.

Selection screen of ourside temperature



U coef measuring screen appears when no probe or outside temperature has to be determined and probes and temperature are chosen.

Measurement screen of U coefficient

You can record values of the measuring screen of U coefficient :
a. Press on Enreg button.
b. Enter a name for the recording.
c. Validate.

Hygrometry

The following functions are enabled only if at least one probe is connected:

- **Hold** (Hold – Min/Max) – see Temperature
- **Config** (Configuration) - see Air velocity
- **Δ T** (Delta T)
- **Calc.** (Calculation)
- **Alarms** - see Air quality
- **Rec** (Recording) - see Air velocity
- **Params** (Parameters) - see Air velocity

Calculations

Press the access key [Calc.]. Press ▶ in order to enter in the submenu and choose calculation type (none, psychrometer or WGBT) by means of arrows keys ▲ and ▼ .
Confirm with **OK**. Select **Esc** to quit this menu.

• ***Psychrometer***

Wet Temperature (Tw) is the temperature at which water evaporated into the air brings the air to saturation at the same temperature. It is expressed in Celsius degree .

Absolute humidity (ρV) is the ratio between the mass of water vapor present to the mass of dry gas. It is expressed in grams of water vapor per kiRecrams of dry gas.

Dew-point temperature (Td): is the temperature to which the air must be cooled, at constant barometric pressure for water vapor to condense into water. It is expressed in Celsius degree.

Contact dew-point temperature (Td) is the dew point temperature measured by a PT100 contact probe. It is expressed in Celsius degree.

Specific enthalpy (i) is the total heat contained in 1 kg of wet air. It is expressed in kJ/kg.

• ***WBGT index (Wet bulb globe temperature).*** For hygrometry probe coupled with black ball thermometer.

If WBGT index is selected, press ▼ then **OK** or ▶ and a list appears. Select **Inside** or **Outside** with arrow ▲ and ▼ .
Confirm with **OK**.
The **WBGT**, described as per **ISO 7243**, allows an evaluation of working climatic conditions.
Outdoors, the following formula is used:
$WBGT_{outside}$ = 0.7 Thn + 0.2 Tg + 0.1 Ta
Indoors, It is calculated from the following formula :
$WBGT_{inside}$ = 0.7 Thn + 0.3 Tg
where: - **Thn** is the natural wet temperature,
- **Tg** is the temperature measured with a black ball thermometer
- and **Ta** is the ambient temperature.

Air quality

The following functions are enabled only if at least one probe is connected:

- **Hold** (Hold – Min/Max) – see Temperature
- **Config** (Configuration) - see Air velocity
- **Δ T** (Delta T) – see Temperature
- **Calc.** (Calculation) – see hygrometry
- **Alarms**
- **Rec** (Recording) - see Air velocity
- **Params** (Parameters) - see Air velocity

Use warning for measuring CO_2 :

- Do not let the probe exposed to high concentrations (>5000 ppm) for a long period..
- Do not directly blow on the probe.
- After an exposure with high concentrations, wait a few minutes to allow to display a constant measuring.

Device must be calibrated regularly. A 12 months periodicity is recommanded.

Alarms

Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable the alarm. Choose your setpoint : CO Limit 1 (first CO setpoint), CO Limit 2 (second CO setpoint), low temperature setpoint and high temperature setpoint. Confirm with **OK** or ▶ .

Select thresholds with **OK** or ▶ to enter CO and temperature setpoints. Select + or – signs with ▲ and ▼ then pass on the first digit with ▶. Low and high **thresholds** entered, confirm with **OK** .

Pressure

Access **Pressure** function by means of (Pressure) key. With **Pressure** function, you can access to following sub-functions

- **Hold** – see Temperature
- **Config.** (Configuration) - see Air velocity
- **Params** (Parameters) - see Air velocity
- **Avg.** (Average) - see Air velocity
- **Rec** (Recording) - see Air velocity

AutoZ

This sub-function allows to compensate for any long-term drifts of the sensing element by a manual adjustment of the zero.
For the ±500 Pa measurement module, self-calibration is performed by the solenoid valve. Once pressing **Autoz** key, the zero is readjusted. This function can also be automatically performed by using the solenoid valve function.
For others measurement modules, self-calibration is performed by disconnecting the two pressure inlets of the sensor, then by pressing **Autoz** key.

Airflow

Access **Airflow** function by means of (Air flow) key. With **Airflow** function, you can access to following sub-functions

- **Hold –** see Temperature
- **Area**
- **Config.** (Configuration) - see Air velocity
- **Params** (Parameters) - see Air velocity
- **Avg.** (Average) - see Air velocity
- **Rec** (Recording) - see Air velocity

Area

- ***Type***

To select vent **Type** press **OK** or ▶.
Select **Lx W** or **Diam** or **K factor** with arrow buttons ▲ and ▼. Confirm with **OK**. If K factor is selected, you must enter value. You can choose a K factor already registered by selecting with ▲ and ▼. Confirm with **OK**. This factor can be modified by selecting with ▲ and ▼, then confirm with **OK** or ▶. Select **Modify** with **OK** or ▶. Enter factor by means of arrow keys ▲ and ▼ . Confirm with **OK** or ▶.

- ***Sizes***

Press ▶ or **OK** to enter into **sizes** sub function. You can choose an air vent already registered by selecting it with arrow keys ▲ and ▼ . Confirm with **OK** or ▶. This air vent can be modified by selecting it with arrows keys ▲ and ▼, then Confirm with **OK** or ▶. Select **Modify** with **OK** or ▶. Enter sizes by means of arrow keys ▲ and ▼ . Confirm with **OK** or ▶.

- ***K2 factor***

Press ▶ or **OK** to enter into the **K2 factor** sub function. Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable this function. Confirm with **OK** .

- ***Units***

To select the unit press **OK** or ▶.
Select **mm** or **in** with arrow buttons ▲ and ▼ . Confirm with **OK**.

CO max

The CO mode is available when a CO/Temperature probe is connected.
You can access this function selecting COmax with the access key (CO max)
The CO is measured on an adjustable period, the maximum value measured in this period is called **CO max** . When CO peak is selected, the period is diplayed (30 seconds by default). Press **Valid.** to launch the measurement. When the countdown is finished, the CO max is displayed.
To modify the period, press **Period** with the access key. Modify time with arrows keys ▲ and ▼.
Confirm with **OK** or ▶.

Air velocity

Access **Air velocity** function by means of (Air velocity) key. With **Air velocity** function, you can access to following sub-functions

- **Hold –** see Temperature
- **Config.** (Configuration)
- **Params** (Parameters)
- **Avg.** (Average)
- **Rec** (Recording)

Average

Press ▶ or **OK** to enter Average sub function. With ▲ and ▼, you can select : **point/point average, auto, point/point automatic**. Confirm with **OK** or ▶.

- ***Point / point average***

This function allows to calculate the average value of various points that you can select.
Numbers of selected points and **parameter** for which calculation is carried out, are displayed
For adding a new measuring point to this calculation, press **OK** to confirm.
If you click on **average icon**, max. and min. values, standard deviation, average of each channel and e numbers of measuring points will be displayed. If you want to see all values, select **Visu.** and scroll with ▲ and ▼.

- ***Automatic average***

This function allows to calculate an average value that the device measured in an interval chosen time.
Timer is displayed. Select **Start** with access key for launching measurement.
If you click on **average icon**, max. and min. values, standard deviation, average of each channel and time chosen will be displayed.

- ***Automatic point/point average***

This function allows to calculate the average value of various points, calculated themselves on a duration beforehand defined.
You must enter duration : click on the **Period** icon. Select **minutes** or **seconds** with arrow buttons ▲ and ▼ .
Scroll digits with▲ and ▼. Confirm with **OK**. The numbers of points is displayed. Press **Ok** for launching measurement.
If you click on **average** icon, max. and min. values, standard deviation, average of each channel and numbers of measuring points will be displayed.
You can view each measuring points if you click on **Visu.**

Configuration

If you use thermocouple probes, you must enter type into the Configuration sub-function.

Configuration sub-function allows to:

- ***Select thermocouple type***

Click on **OK** or ▶ to enter into sub function : a list of thermocouple available (K, J or T type) appears .
Select type with ▲ and ▼. Confirm with **OK**.

- ***Select display***

Click on **OK** or ▶ to enter into sub function. Select channel or display type required (Digital, Bargraphs or Curves) with ▲ and ▼. Confirm with **OK**.
Select the configuration of display required.

• ***Select units***
Click on **OK** or ▶ to enter into sub function : a list of units available appears. Select unit required with ▲ and ▼. Confirm with **OK**.
Click on **Esc** to return to previous screen.

• ***Select integration***
The coefficient of integration allows to smooth the measure, to avoid variations. Click on **OK** or ▶ to enter into sub function : a list of coefficient (From 0 to 9) appears. Select coefficient required with ▲ and ▼. Confirm with **OK**.
Coefficient 0: no integration, important fluctuation in the shown measure.

• ***Select compensation***
It is possible to modify the value of the compensation in temperature. Indeed, the velocity and the airflow with Pitot's tube and with Debimo blades are calculated from a temperature of use in +20°C. It is thus necessary to enter the real temperature of use to obtain more precise results.
Click on **OK** or ▶ to enter into the sub function. Select + or – signs with ▲ and ▼ with ▲ and ▼ then pass on the first digit with ▶. enter the first digit then move to the next one with ▶. Confirm with **OK**.

• ***Select airflow system (only available for Air velocity and Airflow functions)***Click on **OK** or ▶ to enter into sub function : a list of air flow systems available appears (Pitot tube L, S, Debimo or Other).Select your system with ▲ and ▼. Confirm with **OK**.

If **Other** is selected, you must enter a value. Click on **OK** or ▶ to enter into sub function. With ▲ and ▼ , enter the first digit then move to the next one with ▶. Confirm with **OK**.

•***Solenoid valve (available with the ± 500 Pa module)***

Click on **OK** or ▶ to enter into the sub function. Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable the solenoid valve function. Confirm wih **OK** or ▶. When the solenoid valve is enabled, it runs every minute.

Parameters

• ***Language***

Click on **OK** or ▶ to enter and a list of languages available appears.
Select language with arrow keys ▲ and ▼ and Confirm wih **OK**.

• ***Date / Time***

Click on **OK** or ▶ to enter into sub function. Enter the day with ▲ and ▼ then move to the next digit with ▶. Repeat this operation for the month, year, hour and minute. Confirm wih **OK**.

• ***Beep***

This sub-function allows to enable or disable the keypad beep. Click on **OK** or ▶ to enter into the sub function. Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable the beep.
Confirm wih **OK**.

• ***Extinction***

This sub-function allows to enable the automatic shut-off and to select the delay in minute. Click on **OK** or ▶ to enter into the sub function. Select, with ▲ and ▼, **OFF** in order to disable the automatic shut-off or enter the delay (from 15 to 120 minutes).
Confirm wih **OK**.

• ***RF Logging***

This sub-function allows to enable or disable the **RF Recording**. Click on **OK** or ▶ to enter into the sub function. Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable this function.
Confirm wih **OK**.

• ***Screen Saving***

This sub-function allows to enable or disable the screen saving. Click on **OK** or ▶ to enter and a list appears. Enter the delay before the sreen saving activation with ▲ and ▼
Confirm wih **OK**.

• ***Backlit***

This sub-function allows to modify the backlit. Click on **OK** or ▶ to enter. Select your backlit level (from 0 to 9 or **AUTO**) with ▲ and ▼.
Confirm wih **OK**.

If you select AUTO, the AMI 300 adjuts automatically the backlit according to the room brightness.

• ***Key locking***

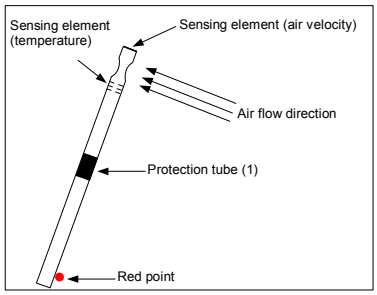
This sub-function allows to enable or disable the **key lock**. Click on **OK** or ▶ to enter into sub function. Select respectively **ON** or **OFF** with ▲ and ▼ in order to enable or disable this function.
Confirm wih **OK**.
If the locking is enabled, the code menu appears

- ***Code***

This sub-function allows to enter the **security code**. Click on **OK** or ▶ and the code appears. Enter the first digit of the code with ▲ and ▼ then move to the next one with ▶**.** Confirm wih **OK**.

Using a hotwire

In order to offset the air pressure, before making a measurement with a hot wire probe, enter in the instrument the air pressure of the day or of the conditions in which the hotwire is located. The adjustement range is from **800 to 1200 hPa**.

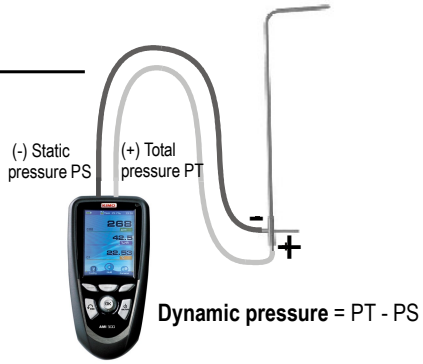


1. Connect the hotwire probe to AMI 300. Probe menu appears.
2. Slide down protection tube (1).
3.The probe must be perpendicular to airflow : the red point at the bottom of the probe must face airflow.
4. Press **OK** to enter in the **Measurement** menu, the air velocity and temperature values are displayed.
5. With arrow keys ◀ and ▶ go to « **Config** » and press **OK**.
6. Go to « **Air pressure** » then press **OK**.
7. Enter air pressure.
8. Press« **Valid.** » then « **Esc** » to go back to measurement mode.

NOTE Measurement is automatically offset, using the climatic condition mondule. Therefore, steps 5, 6, 7, 8 are not required.

Using Pitot tube

1. Connect the pitot tube to AMI 300.
2. The probe must be placed at the center of the duct and parallel to the air flow.
3. Press **OK** to enter in the **Measure** menu, the air velocity and temperature values are displayed on the screen.



Dynamic pressure = PT - PS

Recording

The Recording menu allows a measurement dataset. You can choose between a planned or a continuous dataset. Memory capacity of the instrument is up to **12,000** measurement points or **50** datasets.

1. Create or launch a continuous dataset

A continuous dataset can be carried out using AMI 300 and is composed of several dated measuring points. The operator can choose an automatic or a manual dataset, with an instant value or an average. This datasets can't be set using Datalogger-10 Software.

1.1 Manual dataset

A **manual dataset** is composed of measuring points selected by the operator.

a. Click on **OK** or ▶ to enter into sub function.
b. Select **Manual** with ▲ and ▼. Confirm wih **OK**.
c. Select **Name** with ▲ and ▼. Confirm wih **OK** or ▶. Enter dataset name with arrow keys ◀ ▶ and ▲ ▼. Confirm wih **OK**.
d. For measurement launching, click on **OK** with the access key. The number of points selected and the parameter are displayed.
e. To save your dataset click on **Save** with the access key.

1.2 Automatic dataset

An **automatic dataset** is composed of measuring points with interval of time.

a. Click on **OK** or ▶ to enter sub function.
b. Select **Auto.** with ▲ and ▼. Confirm wih **OK**.
c. Select **Name** with ▲ and ▼. Confirm wih **OK** or ▶. Enter dataset name with the arrow keys ◀ ▶ and ▲ ▼. Confirm wih **OK**.
d. Enter dataset time and interval of time between 2 measurement by selecting **Period** with access key. Select **Duration** or **Interval** with ▲ and ▼. Confirm wih **OK**. Enter minutes and seconds with arrow keys▲ and ▼ (from 1 minutes to 24 hours for the duration and from 5 seconds to 10 minutes for the interval). Confirm with **OK**.
e. Select **Start** for dataset launching.

2. Launch a planned dataset

A planned dataset is composed of several locations. For each location, the operator can enter a theorical value and a tolerance for the parameter to be controlled. Planification must be made via the software.

a. Click on **OK** or ▶ to enter into sub function.
b. Select **Planned** with ▲ and ▼. Confirm wih **OK**.
c. Choose dataset name with ▲ and ▼. Confirm wih **OK**.
d. Select the location with ▲ and ▼. Confirm wih **OK**.

3. Preview of dataset graphic

You can display a graph of datasets performed on the device.

a. Go to **Recording** menu.
b. Select **Display**. Click on **OK** to validate.
c. Select dataset name with arrow keys ▲ and ▼. Click on **OK**.
Summary screen of selected dataset is displayed. From this screen, you can :
• Select other dataset using arrow keys ◀ and ▶.
• Dislplay data of other channels using arrow keys ▲ and ▼.

Dataset summary

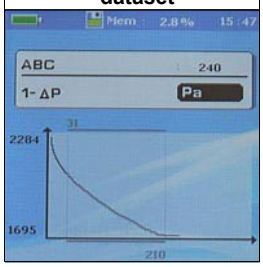
d. Click on **OK** to display selected dataset graph.
From this screen you can :
• Browse on the curve with arrow keys ◀ and ▶ to display values of pionts.
• Select the channel using arrow keys ▲ and ▼.

Dataset graph

Note : if selected dataset has more than 180 points, the device will display a global view of dataset. To zoom on a dataset part, use arrow keys and press key.

The device displays graph of the interval of selected points.

Global graph of dataset



4. Delete all datasets

Select **Delete** with ▲ and ▼. Confirm wih **OK**.

Downloading data

see DataLogger-10 user manual chapter **III – Read device** page 6.

Info menu

This menu allows to view the serial number of instrument and firmware version.

Battery

When battery indicator flashes it is recommended to change the batteries:

1. Remove the front part at the back of the instrument.
2. Remove batteries
3. Insert new batteries (AA-LR6 1,5V) in accordance with proprer polarity drew inside the housing.
4. Replace the front.

Maintenance

KIMO performs calibration, adjustment and maintenance of all your instruments to guarantee a constant level of quality of your measurements. In regards of Quality insurance norms, we recommend that the instruments are checked once a year.

Warranty

KIMO Instruments have 1-year guarantee for any manufacturing defect (return to our After-Sales Service required for appraisal).

NTang – AMI 300 – 07/10/10 – RCS (24) Périgueux 349 282 095 Non-contractual document – We reserve the right to modify the characteristics of our products without prior notice.

Once returned to KIMO, required waste collection will be assured in the respect of the environment in accordance to 2002/96/CE guidelines relating to WEEE.

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